

could be caught.

(5) Figs. 1 and 2 show examples of a transmission type hologram and a reflection type hologram respectively. In the figures, (1) is the photosensitive plate, and (2) is laser light.

(6) The photosensitive plate was exposed to light under the conditions, and the interference fringe to be the hologram was recorded on the photosensitive plate.

This exposure to light of the transmission type hologram and the reflection type hologram was carried out using a light intensity on the photosensitive plate of  $1.0 \text{ mW/cm}^2$  for 10 to 100 seconds at an exposed amount of 1 to  $100 \text{ mJ/cm}^2$ .

#### EXAMPLES 46 TO 49

The same procedures as in Example 45 were repeated to produce three-layer photosensitive plates for recording a hologram, except that the allyl-based prepolymer (A), the radical polymerizable compound (b1) and the viscosity reducing agent (E) were used in the amounts shown in Table 4. Holograms were recorded by using these photosensitive plates.

#### EXAMPLES 50 AND 51

The same procedures as in Example 45 were repeated to produce three-layer photosensitive plates for recording a hologram, except that diallyl isophthalate prepolymer ("Daiso ISO-DAP, DAIP" produced by Daiso Co., Ltd.) or triallyl isocyanurate prepolymer ("TAIC Prepolymer, TAIC" produced by Nippon Kasei Chemical Co., Ltd.) as the allyl-based prepolymer (A), bisphenoxyethanolfluorene diacrylate ("BPEFA" produced by Osaka Gas Co., Ltd.) as the radical polymerizable compound (b1) and SDE as the

viscosity reducing agent (E) were used in respective amounts shown in Table 4. Holograms were recorded by using these photosensitive plates.

#### EXAMPLES 52 AND 53

The same procedures as in Example 45 were repeated to produce three-layer photosensitive plates for recording a hologram, except that ASF400 as the radical polymerizable compound (b1) and divinylbiphenyl ("DBVP" produced by Nippon Steel Chemical Co., Ltd.) as a radical polymerizable compound (b2) were used in respective amounts shown in Table 4. Holograms were recorded by using these photosensitive plates.

#### EXAMPLES 54 TO 61

The same procedures as in Example 45 were repeated to produce three-layer photosensitive plates for recording a hologram, except that ASF400, bis(4-methacryloylthiophenyl)sulfide ("MPSMA" produced by Sumitomo Seika Chemicals Co., Ltd.), tribromophenol acrylate ("BR-30" produced by Daiichi Kogyo Pharmaceutical Co., Ltd.), tribromophenol methacrylate ("SR-804" produced by Daiichi Kogyo Pharmaceutical Co., Ltd.) or N-vinylcarbazole ("NVC" produced by Tokyo Chemical Industry Co., Ltd.) as the radical polymerizable compound (b1), DBVP as the radical polymerizable compound (b2) and SDE as a nonreactive viscosity reducing agent (e1) were used in respective amounts shown in Table 4. Holograms were recorded by using these photosensitive plates.

#### EXAMPLES 62 TO 71

The same procedures as in Example 45 were repeated to produce three-layer photosensitive plates for recording a hologram, except that ASF400 as the radical polymerizable compound (b1), diethyl adipate ("ADE"

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produced by Kanto Chemical Industry Co., Ltd.), dibutyl adipate ("ADB" produced by Wako Pure Chemical Co., Ltd.), dibutyl sebacate ("SDB" produced by Wako Pure Chemical Co., Ltd.), dimethyl phthalate ("PDM" produced by Wako Pure Chemical Co., Ltd.), dibutyl phthalate ("PDB" produced by Kanto Chemical Industry Co., Ltd.) or dioctyl phthalate ("PDO" produced by Wako Pure Chemical Co., Ltd.) instead of SDE as the nonreactive viscosity reducing agent (e1), diallyl orthophthalate monomer ("DAPM" produced by Daiso Co., Ltd.), diallyl isophthalate monomer ("DAIM" produced by Daiso Co., Ltd.), diallyl terephthalate monomer ("DATM" produced by Daiso Co., Ltd.) or diallyl adipate ("ADA" produced by Tokyo Chemical Industry Co., Ltd.) as a (meth)allyl-based viscosity reducing agent (e2) were used in respective amounts shown in Table 5. Holograms were recorded by using these photosensitive plates.

#### COMPARATIVE EXAMPLES 1 TO 5

Almost the same procedures as in Example 1 were repeated to produce three-layer photosensitive plates for recording a hologram, except that ASF400, MPSMA, BP-30, SR-804, NVC or DBVP as the radical polymerizable compound was used in the amount shown in Table 6 and the viscosity reducing agent was not used. Holograms were recorded by using these photosensitive plates. All these radical polymerizable compounds have refractive indexes higher than that of the allyl-based prepolymer (A).

Evaluations of obtained measured values are shown in Tables 4 to 7.

All the holograms obtained in Examples suffered no coloring, and had a high brightness of a diffraction efficiency of 30% or more for the transmission type hologram and the reflection type hologram without